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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,003	06/24/2005	Jonas Salomonson	43318-204695	5256

26694 7590 02/21/2007  
VENABLE LLP  
P.O. BOX 34385  
WASHINGTON, DC 20043-9998

EXAMINER
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NGUYEN, PHU HOANG

ART UNIT	PAPER NUMBER
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1731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/500,003

Applicant(s)

SALOMONSON ET AL.

Examiner

Phu H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 6/23/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/23/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/23/2004
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Q in figure 2 is not mentioned in the Specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities: on page 2, line 32-35 of the Specification, the phrase "higher resistance to cracking (i.e. higher  $K_c$ ) then the pure glass" should be "higher resistance to cracking (i.e. higher  $K_c$ ) than the pure glass".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salomonson et al. (WO 9913795) in view of Rogers et al. (U.S Patent No. 4892846).

Regarding claim 1, Salomonson et al. (WO 9913795) discloses a method of making artificial dental bridges consisting of a ceramic densely sintered high strength individual core (B) with fired on porcelain (A) by powder metallurgical methods characterised in that the individual densely sintered bridge parts are joined to a bridge core with glass, which in melted condition wets the ceramic core material and therefore spreads into the gap between the bridge parts and reacts with the ceramic such that the glass during cooling forms a strong joint between the individual densely sintered ceramic bridge parts (corresponding to the claimed "ONE step heat treatment" recited in the instant claim 1) (claim 1 of WO 9913795 and page 1, line 23- page 2, line 6).

However, Salomonson et al. (WO 9913795) did not expressly disclose that the glass material is particle reinforced glass. Rogers et al. discloses reinforced sintered glass-ceramics where the glass-ceramics matrix is incorporated with particles or fibers to increase the fracture toughness of the matrix (column 1, line 31-39 and figure 1).

Therefore, it would have been obvious to one of ordinary skill in the art to improve the method taught by Salomonson et al. (WO 9913795) by using particle reinforced glass instead of glass to increase the fracture toughness.

Regarding claim 2-7, Salomonson et al. (WO 9913795) discloses identical features in claims 2-7 of WO 9913795 as the instant claims 2-7.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salomonson et al. (WO 9913795) in view of Scherer (U.S Patent No. 4574063). Salomonson did not expressly discloses in WO 9913795 that the particles within the bridge unit are large enough such that drying stresses on removal of the solvent do not lead to catastrophic failure of the bridge unit. Scherer discloses the cracking problem is avoided with the relatively large particle sizes of the suspended oxides (column 1, line 53-59). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use particles large enough within the bridge unit in the method taught by Salomonson et al. (WO 9913795) such that drying stresses on removal of the solvent do not lead to cracking as taught by Scherer.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tyszblat (U.S Patent No. 4772436) discloses a method for manufacturing a dental prosthesis in claim 1 comprising:

molding a model of a tooth that is to receive said prosthesis from a molding mass that slightly expands linearly on solidification,

preparing a slip comprising an aqueous suspension of metal oxide particles to which has been added a suspension stabilization agent;

contacting said model of said tooth with said slip until a layer of agglomerated metal oxide particles has been achieved,

imparting to said layer of agglomerated metal oxide particles an outer shape desired for an infrastructure of said prosthesis,

baking said model of said tooth coated with said metal oxide based infrastructure to effect initially a dehydration of said model of said tooth thereby causing withdrawal of said model from said infrastructure,

slightly solid phase fritting the metal oxide based infrastructure to produce a binding between said metal oxide particles without causing a substantial volumetric reduction of said infrastructure, and then

impregnating said infrastructure with glass at a temperature such that all pores of said infrastructure are filled with said glass, thereby producing said prosthesis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu H. Nguyen whose telephone number is 571-272-25931. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
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P.N  
2/8/2008